

What is claimed is:

1. A mobile communication system which includes a mobile unit,
a radio base station, and a radio controller,

wherein

5 the radio controller comprises:

first and second user plane processing means for performing
processing to control transfer of user data in relation to the
mobile unit; and

control plane processing means for processing to control
10 transfer of signaling having a control signal, the control plane
processing means being physically separated from the first and
second user plane processing means and being provided in an upper
position of the first and second user plane processing means,
and

15 when detecting a congestion state of processing, the first
user plane processing means transfers a part of the processing
to the second user plane processing means.

2. The mobile communication system according to Claim 1,
wherein

20 the first user plane processing means is an active system
connected to the radio base station, and

the second user plane processing means is a backup system
for the first user plane processing means.

3. The mobile communication system according to Claim 1,
25 wherein the first user plane processing means comprises means

for, in response to the detection of the congestion state,
controlling so as to switch a transmission/reception destination
of the control signal and the user data to the second user plane
processing means as well as transmitting a switching direction
5 to the second user plane processing means, and means for notifying
the second user plane processing means of information necessary
for processing transferred to the second user plane processing
means.

4. The mobile communication system according to Claim 3,
10 wherein the second user plane processing means comprises means
for inheriting the information in response to the notice of the
information as well as processing the control signal and the
user data in response to reception of the switching direction.

5. The mobile communication system according to Claim 1,
15 wherein
the radio base station is present in a first communication
network, and the first and second user plane processing means
and the control plane processing means are connected to a second
communication network different from the first communication
20 network, and

the first user plane processing means further comprises
conversion interface means between the first and second
communication networks.

6. The mobile communication system according to Claim 5,
25 wherein the second user plane processing means transmits and

receives the control signal and the user data via the conversion interface means in the first user plane processing means.

7. The mobile communication system according to Claim 5, wherein the first communication network includes an ATM communication network, and the second communication network includes an IP communication network.

8. An operation control method in a mobile communication system which includes first and second user plane processing means for performing processing to control transfer of user data in relation to a mobile unit and control plane processing means for performing processing to control transfer of signaling having a control signal, the control plane processing means being physically separated from the first and second user plane processing means and being provided in an upper position of the first and second user plane processing means,

wherein the first user plane processing means executes a step of, when a congestion state of processing is detected, transferring a part of the processing to the second user plane processing means.

9. The operation control method according to Claim 8, wherein the first user plane processing means is an active system connected to a radio base station for providing a radio bearer to the mobile unit, and

the second user plane processing means is a backup system for the first user plane processing means.

10. The operation control method according to Claim 8, wherein the first user plane processing means further executes:

a step of, in response to the detection of the congestion state, controlling so as to switch a transmission/reception
5 destination of the control signal and the user data to the second user plane processing means;

a step of transmitting a switching direction to the second user plane processing means; and

a step of notifying the second user plane processing means
10 of information necessary for processing transferred to the second user plane processing means.

11. The operation control method according to Claim 10, wherein the second user plane controlling means executes:

a step of inheriting the information in response to the
15 notice of the information; and

a step of processing the control signal and the user data in response to reception of the switching direction.

12. The operation control method according to Claim 8, wherein

the radio base station is present in a first communication
20 network, and the first and second user plane processing means and the control plane processing means are connected to a second communication network different from the first communication network, and

the first user plane processing means further executes a step of performing interface conversion between the first and second communication networks.

13. The operation control method according to Claim 12, wherein
5 the second user plane processing means transmits and receives the control signal and the user data via the step of performing the interface conversion in the first user plane processing means.

14. The operation control method according to Claim 12, wherein
the first communication network includes an ATM communication
10 network, and the second communication network includes an IP communication network.